

ward, but backwards, and side-ways, and seems indeed much rather to be *Homogeneous* or similar to those pores, which we may with great probability believe to be the channels of *pellucid* bodies, not directed, or more open any one way, then any other, being equally pervious every way. And, according as these pores are more or greater in respect of the *interstitial* bodies, the more transparent are the so constituted concretes; and the smaller those pores are, the weaker is the *Impulse* of light communicated through them, though the more quick be the progress.

Upon this Occasion, I hope it will not be altogether unseasonable, if I propound my conjectures and *Hypothesis* about the *medium* and conveyance of light.

I suppose then, that the greatest part of the *Interstitia* of the world, that lies between the bodies of the Sun and Stars, and the Planets, and the Earth, to be an exceeding fluid body, very apt and ready to be mov'd, and to communicate the motion of any one part to any other part, though never so far distant: Nor do I much concern my self, to determine what the Figure of the particles of this exceedingly subtle fluid *medium* must be; nor whether it have any interstitiated pores or vacuities, it being sufficient to solve all the *Phænomena* to suppose it an exceedingly fluid, or the most fluid body in the world, and as yet impossible to determine the other difficulties.

That being so exceeding fluid a body, it easily gives passage to all other bodies to move to and fro in it.

That it neither receives from any of its parts, or from other bodies; nor communicates to any of its parts, or to any other body, any impulse, or motion in a direct line, that is not of a determinate quickness. And that when the motion is of such determinate swiftness, it both receives, and communicates, or propagates an impulse or motion to any imaginable distance in streight lines, with an unimaginable celerity and vigour.

That all kind of solid bodies consist of pretty massie particles in respect of the particles of this fluid *medium*, which in many places do so touch each other, that none of this fluid *medium* interposes much after the same mannner (to use a gross similitude) as a heap of great stones compass one great *congeries* or mass in the midst of the water.

That all fluid bodies which we may call *tangible*, are nothing but some more subtle parts of those particles, that serve to constitute all *tangible* bodies.

That the water, and such other fluid bodies, are nothing but a *congeries* of particles agitated or made fluid by it in the same manner as the particles of *Salt* are agitated or made fluid by a parcel of water, in which they are dissolv'd, and subsiding to the bottom of it, constitute a fluid body, much more massie and dense, and less fluid than the pure water it self.

That the air on the other side is a certain company of particles of quite another kind, that is, such as are very much smaller, and more easily moveable by the motion of this fluid *medium*; much like those very subtle parts of *Cocheneil*, and other very deep tinging bodies, where by a very small

small parcel of matter is able to tinge and diffuse it self over a very great quantity of the fluid dissolvent; or somewhat after that manner, as smoak, and such like minute bodies, or steams, are observ'd to tinge a very great quantity of air; onely this last similitude is deficient in one propriety, and that is a perpetuity or continuance in that state of commixture with the air, but the former does more neerly approach to the nature and manner of the air's being dissolv'd by this fluid or *Æther*. And this Similitude will further hold in these proprieties; that as those tinctures may be increased by certain bodies, so may they be precipitated by others; as I shall afterwards shew it to be very probable, that the like accidents happen even to the Air it self.

Further, as these solutions and tinctures do alter the nature of these fluid bodies, as to their aptness to propagate a motion or impulse through them, even so does the particles of the Air, Water, and other fluid bodies, and of Glass, Crystal, &c. which are commixt with this bulk of the *Æther*, alter the motion of the propagated pulse of light; that is, where these more bulkie particles are more plentiful, and consequently a lesser quantity of the *Æther* between them to be mov'd, there the motion must necessarily be the swifter, though not so robust, which will produce those effects, which I have (I hope) with some probability, ascribed to it in the digression about Colours, at the end of the *Observations* on *Muscovy-glass*.

Now, that other Stones, and those which have the closest and hardest textures, and seem (as far as we are able to discover with our eyes, though help'd with the best *Microscopes*) freeest from pores, are yet notwithstanding replenish'd with them; an Instance or two will, I suppose, make more probable.

A very solid and unflaw'd piece of cleer white *Marble*, if it be well polish'd and glaz'd, has so curiously smooth a surface, that the best and most polish'd surface of any wrought-glass, seems not to the naked eye, nor through a *Microscope*, to be more smooth, and less porous. And yet, that this hard close body is replenish'd with abundance of pores, I think these following Experiments will sufficiently prove.

The first is, That if you take such a piece, and for a pretty while boyl it in Turpentine and Oyl of Turpentine, you shall find that the stone will be all imbued with it; and whereas before it look'd more white, but more opacous, now it will look more greasie, but be much more transparent, and if you let it lie but a little while, and then break off a part of it, you shall find the unctuous body to have penetrated it to such a determinate depth every way within the surface. This may be yet easier try'd with a piece of the same *Marble*, a little warm'd in the fire, and then a little Pitch or Tarr melted on the top of it; for these black bodies, by their insinuating themselves into the invisible pores of the stone, ting it with so black a hue, that there can be no further doubt of the truth of this assertion, that it abounds with small imperceptible pores.

Now, that other bodies will also sink into the pores of *Marble*, besides *unctuous*, I have try'd, and found, that a very Blue tincture made in
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